

REMARKS

Claim rejections

The Examiner rejected Claims 1-25 and 28-31 as being unpatentable under 35 USC 103(a) over US Patent 4,555,193 to Stone ("Stone") and further in view of WO 94/15431 to Novel et al. ("Novel") and US Patent 4,585,908 to Smith ("Smith").

Applicants believe that this rejection is inappropriate and respectfully ask reconsideration in view of the following remarks. Applicants believe that there are crucial differences between their invention as claimed and the prior art, in terms of both methodology and apparatus, and that in view of these differences, a rejection of Applicants' claims is inappropriate.

Specific comments regarding the rejections set forth by the Examiner in his April 18, 2005 Office action appear towards the end of these Remarks.

Methodology and apparatus of Stone

A review of the principles of operation of the invention disclosed in Stone is a good starting point.

As explained by Stone in column 4, lines 53-61:

To obtain one of the other characters printed on a key, the user will look to the field of keys to which this key belongs to find the key having a background color identical to the color of the desired character. The field to which a key belongs is determined by position, orientation or some other visually obvious criterion. The other key is **actuated concurrently** with the key upon which the desired character is printed to select the desired character. (emphasis added)

The words “concurrent” and “concurrently” appear 25 times in Stone (including every independent claim). Because Stone relies on the principle of concurrent actuation, the number of symbols appearing on any given key depends on the position of that key in its respective field: Keys further to the left have more symbols, whereas keys further to the right necessarily have fewer symbols. This is clear from a careful reading of Stone, e.g., Figures 1-2 and column 4, line 64 through column 5, line 2:

...in the horizontal fields 12, 14, 16 the leftmost character on the key is selected by actuating the single key independently of any other. The second character is selected by concurrent actuation with the neighboring key to the right. The third character is selected by concurrent actuation with the key two positions to the right and so on.

For the same reason, the keyboard of Stone requires a greater number of colors to be used. Note that in Stone’s preferred embodiment “five background colors are used in the keyboard...”; see column 3, lines 28-29.

In particular, consider the field in Stone that is dedicated to numerals, shown in Figures 1 and 2. Note that the number of numerals on the keys decreases as one moves along the row from left to right. The most leftward key 12a has four numerals (“1”, “2”, “3”, and “4”), the key 12b to its immediate right has three (“5”, “6”, and “7”), the next key 12c has two (“8” and “9”), and finally the key furthest to the right 20d has just one (“0”). The methodology of Stone demands that the number of numerals on the keys must decrease in this fashion, since keys to the right are used for the purpose of disambiguation.

Note that if the most rightward key 20d were to have, for example, 4 numerals or symbols displayed on it, Stone’s methodology would permit **only one** of these 4 to be

selected (e.g., a symbol that was colored black), and that symbol could be chosen by simply selecting the key 20d, just as the blackened numeral “1” is selected by simply selecting the key 12a. However, Stone would not allow any of the other three symbols to be selected. This is because there are no keys to the right of the key 20d that can be used in combination with the key 20d to select additional symbols.

Stone cannot be applied to Applicants’ embodiments

The preceding paragraph should be borne in mind when considering whether Stone can be applied to Applicants’ embodiments. In this regard, it is helpful to consider the specific embodiment shown in Figure 10 of Applicants’ specification. Note that each of the keys in the far right column of this layout displays the numerals “3”, “6”, and “9” along with at least 3 letters. There is no way that Stone’s methodology, however, can be used to select each and every one of the alphanumeric symbols on these three keys, since there is no key to the right of the “3”, “6”, and “9” keys that can provide the needed disambiguation. Indeed, the same problem is evident for keys in the far left hand column and the middle column of Figure 10. For example, the key bearing the numeral “4” displays 3 letters, but since there are only two keys to the right of the 4-key, the methodology of Stone would permit only 2 of them to be selected. Thus, the methodology of Stone simply can not be applied to Applicants’ preferred embodiment of Figure 10.

Accordingly, standard telephone and cellphone keyboards may be used with Applicants’ methodology, whereas the methodology of Stone can not be applied to these standard keyboards. This difference arises because Stone’s concurrent actuation of keys

requires that the key providing disambiguation be to the right of the key displaying the desired alphanumeric. In Applicants' invention, disambiguation is provided by a subsequently selected key that may, for example, lie to the left or to the right of the first selected key, or the first selected key itself may provide any needed disambiguation, thereby permitting more alphanumeric characters to be displayed on a given number of keys. Note that Applicants' Claims 5-12, 15-17, 20-22, and 28-37 are all directed to embodiments that include a 3 x 3 matrix of keys, which are consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. Since the methodology of Stone can not be applied to these embodiments, an obviousness rejection is inappropriate.

Applicants' other claims are not specifically directed to a 3 x 3 matrix of keys, but the same problem with Stone discussed above argues against applying the methodology of Stone to the other embodiments claimed by Applicants. In each of independent Claims 1 and 13, for example, there is a limitation directed to "each of at least 8" numeral-displaying keys having language characters thereon. Independent Claims 24 and 25 stipulate that the numerals 0-9 are displayed on respective keys and that letters of the English alphabet are displayed on numeral-displaying keys. Independent Claims 1, 24, and 25 further stipulate that a particular two-key sequence is to be used, with this sequence being suggested by the color-coded or pattern-coded arrangement itself. Trying to apply Stone's methodology to any such layout leads to problems with disambiguation like those discussed above, because in general there will be at least a few keys with too many symbols. This is evidently why Stone does not mix numerals and letters on the same keys.

Comments on the Examiner's latest rejections

With respect to the Examiner's rejection of Claim 1, the Examiner has taken the approach of associating various elements in Claim 1 with respective references in the prior art, and then concluding that Claim 1 is directed to subject matter that is obvious. What is missing from this analysis is an attempt to properly understand Applicants' claimed subject matter as a **combination**. For example, the Examiner states on page 3 of his latest Office action that:

...it would have been obvious to use a 3x3 matrix keypad as a data input means in the suggested telecomputer communication system of Stone as taught by Novel because Stone states his data input method is suited for a pocket sized telecomputing system...

One problem with this analysis is that, as explained above, Stone simply does not work with a 3x3 matrix keypad of letters and language characters (such as those of Novel and Smith), since the methodology of Stone would not permit the language characters of such a 3x3 matrix keypad to be disambiguated. Indeed, the only embodiment disclosed in Stone shows **13** keys displaying alphanumeric characters.

The Examiner goes on to state on page 3 that:

With respect to the selection of each key with a users (sic) finger or stylus one of ordinary skill in the art would readily recognize the use of the finger or stylus is a known method of inputting data on the keypad of a hand-held device...

But this completely misses the point! The Examiner is encouraged to read Claim 1 in its entirety and in particular the following limitation:

selecting a first character displayed on a first one of said 8 keys, wherein the first character has a first marking, by first selecting the first key with a user's finger or stylus and then selecting a key displaying the first marking with **the** user's finger or stylus...(emphasis added)

That is to say, the user makes a key selection with his finger or stylus, and then uses **the same finger (or stylus)** to make another key selection. Note how this language distinguishes Stone, which as noted above requires that a two-key selection step involve the concurrent selection of two keys, i.e., **Stone requires that two (different) fingers be used simultaneously**. The device of Stone may or may not be usable with one hand, but it is certainly not usable with just one finger! Accordingly, Applicants' invention offers greater ease of use.

At another point on page 3 of his Office action, the Examiner states that:

...Stone suggests in col. 6, lines 34-38 the changing and rearranging of letters to suit a particular device...

and goes on to conclude that Applicants' invention is obvious. However, this excerpt from Stone takes on a different meaning when read in its context. Column 6, lines 34-38 of Stone state that:

The invention being thus described, it will be obvious that **the same** may be varied in many ways. For example, the number and the location of the fields may be rearranged, and the lettering and coloring may be changed to suit the particular device. These and other changes can be made without departing from **the spirit and the scope of the invention**... (emphasis added)

Note that while Stone suggests changing the number and location of the fields, as well as the lettering and coloring, he does not suggest changing the number of keys. Moreover, Stone nowhere suggests that anything other than a concurrent actuation arrangement is contemplated when two keys are used to make a selection. It is not a fair reading of Stone to assert that Stone renders obvious any and all conceivable color-coded and pattern-coded disambiguation arrangements; rather, a fair reading of Stone would limit the interpretation of this excerpt from column 16 to mean that Stone contemplates that other keyboards may be used, so long as they are consistent with Stone's principle of operation—namely, concurrent key selection. To this end, the Examiner's attention is drawn to that portion of MPEP 2143.01 titled "The proposed modification cannot change the principle of operation of a reference" which, with respect to obviousness rejections, states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)

Modifying Stone as suggested by the Examiner would certainly change its principle of operation.

With respect to both the Novel and Smith references, Applicants further note that neither one discusses any disambiguation arrangement that relies on color-coded or pattern-coded keys. Indeed, Applicants are not aware of any prior art that discloses sequential key input devices utilizing color-coding or pattern-coding, in spite of the ease of use that such coding facilitates. This in itself suggests that color-coding and pattern-coding in such devices is not obvious.

The Examiner has not offered a detailed rejection of independent Claims 13, 24, and 25 (which are apparatus claims), but rather refers back to his rejection of Claim 1 (which is a method claim). Note that Claim 13 is directed to an apparatus in which “each of at least 8 of said numeral-displaying keys” have “language characters thereon”. Note that Claims 24 and 25 include limitations directed to “letters of the English alphabet being displayed on the numeral-displaying keys” (emphasis added). Claims 13, 24, and 25 also include various limitations directed to color-coding and pattern-coding. When these limitations are taken together and these claims are properly viewed as a **combination of elements**, it is clear that they adequately distinguish the prior art. For example, Stone can not be used for disambiguation when too many language characters are packed into a limited number of keys, as discussed above. This is most evident in the case that all the letters of the English alphabet are packed into a 3x3 matrix of numeral bearing keys, as in Applicants’ Claim 16.

Applicants also wish to highlight Claims 10, 22, and newly added Claims 32-37, all of which are directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary; rather, they complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. As noted on page 14, lines 2-5 of the specification:

The coloration arrangement of FIGURE 10 thus provides a strong visual cue that reinforces the coding sequences outlined in FIGURE 3, thereby helping the user to rapidly and accurately select the appropriate coding sequence for a given letter.

That is to say, the claimed color-coded layouts are significant in their own right in that they act as a visual guide to the user when implementing the two-key selection methodology that has been determined by the Patent Office to be patentable.

Thus, Applicants find the rejection of Claims 10 and 22 to be particularly odd, since the Examiner has in effect taken the position that the two-key sequence invention disclosed and claimed by Applicants in US Patent 6,765,556 somehow becomes obvious as soon as a color-coded or pattern-coded enhancement to that invention is introduced. Is there really any other reason to color-code or pattern-code the keys and letters in the way indicated by the claim limitations of, for example, Claims 10, 22, and 32-37 other than to guide the eye of the user when utilizing the corresponding, patented two-key selection method? And if not, then

why would the subject matter of these claims be obvious? One would think that if a particular two-key sequence methodology were patentable, then an arguably novel and non-obvious color-coded or pattern-coded arrangement that provided a significant enhancement in ease of use would also be patentable. Applicants believe that the Examiner should carefully reconsider the rejection of these claims and all the pending claims, for the reasons discussed herein.

Summary

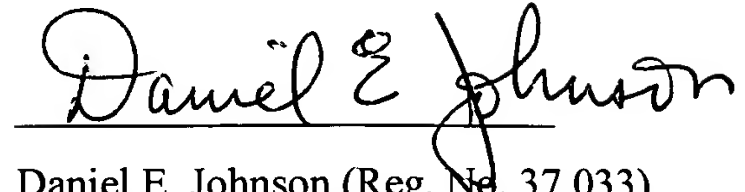
With respect to Applicants' claims, the Examiner is encouraged to read **all** the claim limitations together as a **combination**. Note that Applicants are not claiming every conceivable color-coded or pattern-coded selection method or apparatus.

In particular, Applicants believe that the Examiner has failed to explain how a color disambiguation arrangement that relies on the principle of the **concurrent** selection of two keys (i.e., Stone) could render obvious Applicants' completely different color disambiguation arrangement, which relies on the **sequential** selection of keys (and therefore allows greater flexibility in the placement of alphanumeric characters on the keys). Stone simply can not work or be made to work with the embodiments claimed by Applicants without changing Stone's principle of operation. Accordingly, Applicants' claimed apparatuses and method can not be properly regarded as obviousness modifications of the prior art, in accordance with MPEP 2143.01.

The Examiner is encouraged to call the undersigned to expedite the prosecution of this application.

Respectfully submitted,

Eser Kandogan et al.

A handwritten signature in black ink, reading "Daniel E. Johnson". The signature is written in a cursive style with a horizontal line underneath the name.

Daniel E. Johnson (Reg. No. 37,033)
Agent for Applicants
Phone (408) 927-3367

ARC920010111US1.am3.doc